

PATENT  
Serial No. 10/517,917  
Reply Brief in Reply to Examiner's Answers of August 18, 2010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of  
Hubert Cecile Francois MARTENS, et al.

Atty. Docket: NL 020573US

Serial No. 10/517,917

Confirmation No. 8862

Filed: December 14, 2004

Group Art Unit: 2627

Title: OPTICAL DATA STORAGE MEDIUM AND USE OF SUCH MEDIUM

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APPELLANTS' SECOND REPLY BRIEF

Sir:

In response to the Examiner's Answers mailed on August 18, 2010, please consider  
the following remarks:

REMARKS

Appellants maintain the arguments submitted in the Appeal Brief filed on May 26, 2010, which is incorporated herein by reference. Further, Appellants refute the allegations made in the Examiner's Answer of August 18, 2010.

In particular, in the Response to Argument section beginning on page 7 of the Examiner's Answer of August 18, 2010, it is alleged that the present invention as recited in independent claim 1 is obvious because U.S. Patent No. 5,764,619 (Nishiuchi) discloses information pits having a pit width W13 of 300nm, and U.S. Patent Application Publication No. 2002/0006105 (Usami) discloses a pre-groove having a depth of 20 to 100 nm. This allegation is respectfully traversed.

Independent claim 1 specifically recites (illustrative emphasis provided):

wherein the first  $L_0$  guide groove has a depth  $G_{L0}$  in the range 25 nm <  $G_{L0}$  < 40 nm, and the first reflective layer comprises a metal and has a thickness > 50 nm, and wherein the first  $L_0$  guide groove has a full half maximum width  $W_{L0}$  < 350 nm.

That is, the inventive multi-stack optical data storage medium recited in independent claim 1, has a particular combination of the groove depth  $G_{L0}$  and the groove width  $W_{L0}$ , namely, 25 nm <  $G_{L0}$  < 40 nm and  $W_{L0}$  < 350 nm. While Nishiuchi discloses a pit width W13 of 300nm and Usami discloses a pre-groove having a depth of 20 to 100 nm, the particular combination of the groove depth  $G_{L0}$  and the groove width  $W_{L0}$ , namely, 25 nm <  $G_{L0}$  < 40 nm and  $W_{L0}$  < 350 nm is nowhere disclosed or suggested in Nishiuchi, Usami, and combination thereof.

In particular, while Nishiuchi discloses a pit width W13 of 300nm, the depth of this very same Nishiuchi pit is 90nm, where Nishiuchi specifically discloses on column 20, lines 59-60 that "the pit width W13 was 0.3  $\mu$ m and the depth was 90 nm." (Emphasis added) This combination of pit width and depth of 0.3  $\mu$ m and 90nm is different from the combination of groove width  $W_{L0} < 350$  nm and depth  $G_{L0}$  in the range  $25\text{nm} < G_{L0} < 40\text{nm}$ , as recited in independent claim 1. Further, as correctly noted on page 4, lines 3-4 of the Final Office Action, Nishiuchi does not disclose or suggest that the "first  $L_0$  guide groove has a depth  $G_{L0}$  in the range  $25\text{ nm} < G_{L0} < 40\text{ nm,}$ " as recited in independent claim 1. Usami is cited in an attempt to remedy the deficiencies in Nishiuchi.

Usami is directed to an optical data recording medium having a single recording layer. The Usami recording medium has a transparent substrate in which a pre-groove is formed having a depth of 20 to 100 nm. While this Usami pre-groove has a depth which is within the range recited in independent claim 1 of  $25\text{ nm} < G_{L0} < 40\text{ nm}$ , this very same Usami pre-groove has a width of 400 to 630 nm. (See paragraphs [0009]-[0010]) That is, Usami discloses a pre-groove having the combination of a pre-groove having a depth of 20 to 100 nm and a width of 400 to 630 nm.

In summary, Nishiuchi discloses an optical recording medium having two separate recording layers, where a pit has a width/depth combination of width W13 being 0.3  $\mu$ m and the depth being 90 nm, and Usami discloses an optical data recording medium having a single recording layer, where pre-groove has a width/depth combination of

depth of 20 to 100 nm and a width of 400 to 630 nm. The particular combination of the groove depth  $G_{L0}$  and the groove width  $W_{L0}$ , namely,  $25 \text{ nm} < G_{L0} < 40 \text{ nm}$  and  $W_{L0} < 350 \text{ nm}$ , as recited in independent claim 1, is nowhere disclosed or suggested in Nishiuchi, Usami, and combination thereof.

There is no apparent reason in the prior art for one skilled in the art to suggest a multi-stack optical data storage medium having the particular groove having the particular combination of the groove depth and width recited in independent claim 1, namely, a groove having a depth  $G_{L0}$  of  $25 \text{ nm} < G_{L0} < 40 \text{ nm}$  and a width of  $W_{L0} < 350 \text{ nm}$ . It is the combination of the shallow groove depth and small width which is important to provide a desired reflection and yet have less visible variation or wobble of the guide groove, for example, as described on page 4, lines 24-29 of the present application.

It is respectfully submitted that the particular combination of the groove depth and width recited in independent claim 1, namely, a groove having a depth  $G_{L0}$  of  $25 \text{ nm} < G_{L0} < 40 \text{ nm}$  and a width of  $W_{L0} < 350 \text{ nm}$ , can only be arrived using the present application as a road map to reconstruct the present invention. Without using the present application as a road map to reconstruct the present invention, and without the benefit of impermissible hindsight, one skilled in the art would not arrive in an obvious manner to particular combination of the groove depth and width recited in independent claim 1.

Nishiuchi discloses the combination of groove width  $W13$  of  $0.3 \mu\text{m}$  and depth of  $90 \text{ nm}$ , and Usami discloses the combination groove depth of 20 to 100 nm and width of

400 to 630 nm. These combinations are different from, and do not render obvious, the combination recited in independent claim 1, namely, a groove having a depth  $G_{L0}$  of  $25\text{nm} < G_{L0} < 40\text{ nm}$  and a width of  $W_{L0} < 350\text{ nm}$ . Rather, when the groove width is 0.3  $\mu\text{m}$ , then groove depth is 90nm, as disclosed in Nishiuchi; and when the groove depth is between 20 to 100 nm, then groove width is between 400 to 630 nm, as disclosed in Usami. At best, the combination of Nishiuchi and Usami discloses or suggests having 0.3 $\mu\text{m}$  wide and 90 nm deep grooves and grooves with a depth of 20 to 100 nm and a width of 400 to 630 nm.

Based on the foregoing, it is respectfully requested that the rejection under 35 U.S.C. §103(a) of independent claim 1 be reversed, and independent claim 1 be allowed. In addition, it is respectfully submitted that claims 4-10 and 12 should also be allowed at least based on their dependence from independent claim 1.

In addition, Appellants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Appellants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

CONCLUSION

Claims 1, 4-10 and 12 are patentable over Nishiuchi and Usami.

Thus, the Examiner's rejections of claims 1, 4-10 and 12 under 35 U.S.C. §103(a) over Nishiuchi in view of Usami should be reversed.

Respectfully submitted,

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